lid koninklijke metaalunie

vca

ISO 9001

MEMBER OF NETHERLANDS MARITIME TECHNOLOGY

About us

Lamers System Care B.V. is an independent consultant and distributor of ecofriendly & sustainable antifouling systems to prevent biofilm/ fouling on ships and in cooling systems.

- Established in: 2016
- Located: South-East of The Netherlands, Uden

The problem: scaling (buildup in fluids)

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The problem: scaling (dry buildup)

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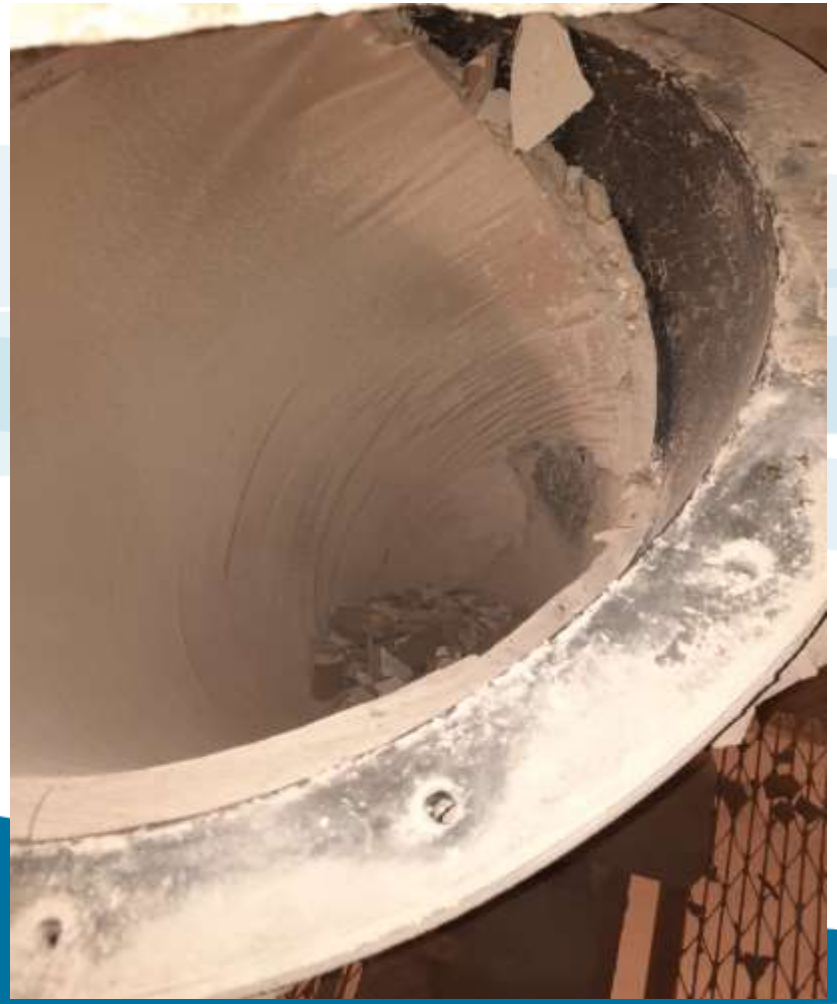


How does scaling form?

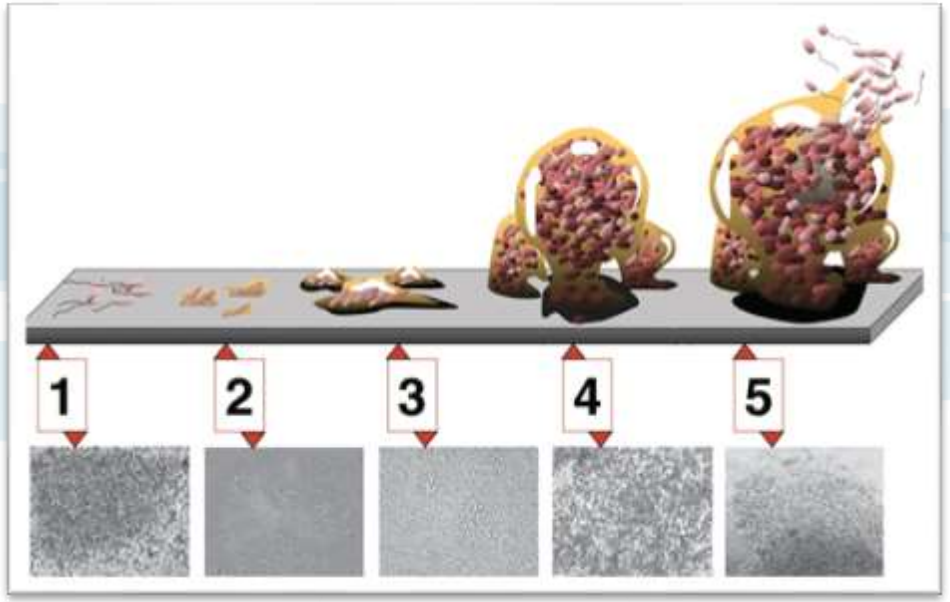
- Chemical reaction
- Temperature changes
- Agglomeration of particles
- Evaporation
- Moisture is introduced (dew, humidity etc)

The problem: biofouling

The problem: biofouling

How does biofouling form?

1. Microscopic organisms settle and multiply – creating the biofilm
2. The biofilm layer forms a protective environment
3. Bacteria and larger organisms easily attach to the biofilm
4. Larger organisms colonize the surface area



- **Ideal conditions for marine growth:**
  - Warmer waters / Sunshine
  - pH balance (varies per species)
  - Mud and slime
  - Nutritious waters

Disadvantages of fouling and scaling

- Decreased production
- Added downtime
- Increased cleaning costs
- Unexpected maintenance
- Reduced efficiency equipment
- Increased wear / failure equipment
- Unreliable measurements
- Microbiologically induced corrosion

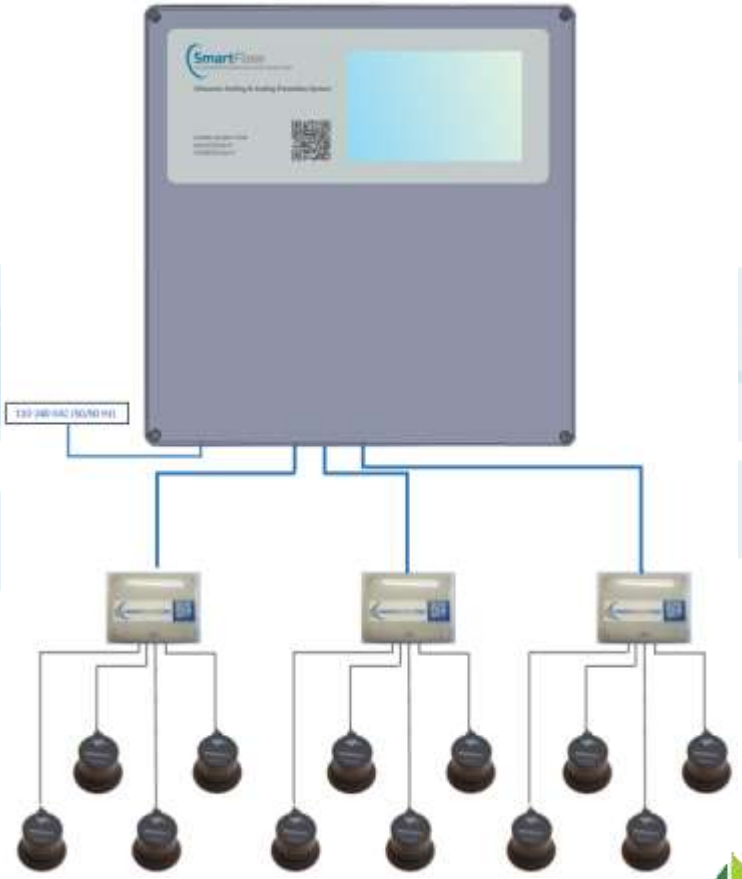
Solution: Ultrasonic System

How it works

- Ultrasonic pulses create an environment were it is hard for particles to attach
- The structure (wall, pipe, filter, etc) will amplify the Ultrasonic sound
- It is a preventive solution

Solution: Technical Specifications

Product	SF05 – SF12
PSU approval	CE
Voltage	AC 110-240V 50/60Hz (DC range 22-30V)
Transducers	5 - 12 pieces
Average power consumption	<50 Watts
IP Rating Control unit	66
IP Rating Transducer	67
Total weight (excluding extra cable length)	17kg total weight - 4kg (control unit) - 1.2kg per transducer
Dimensions (mm)	406 mm x 401 mm x 120 mm



Contributions to SDGs

12.2

“By 2030, achieve the sustainable management and efficient use of natural resources.”

12.4

“By 2020, achieve environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.”

Contribution Ultrasonic antifouling:

With a life expectancy of 10+ years, our system replaces or reduces chemicals required for cleaning. Therefore the production, use and release into the environment is reduced or sometimes completely replaced.

Applications

Applications

- ✓ Plate heat exchangers
- ✓ Pumps
- ✓ Pipework
- ✓ Filters
- ✓ Valves
- ✓ Pipe heat exchangers
- ✓ Cyclones
- ✓ and more

Installation examples

Installation examples

Results - biofouling

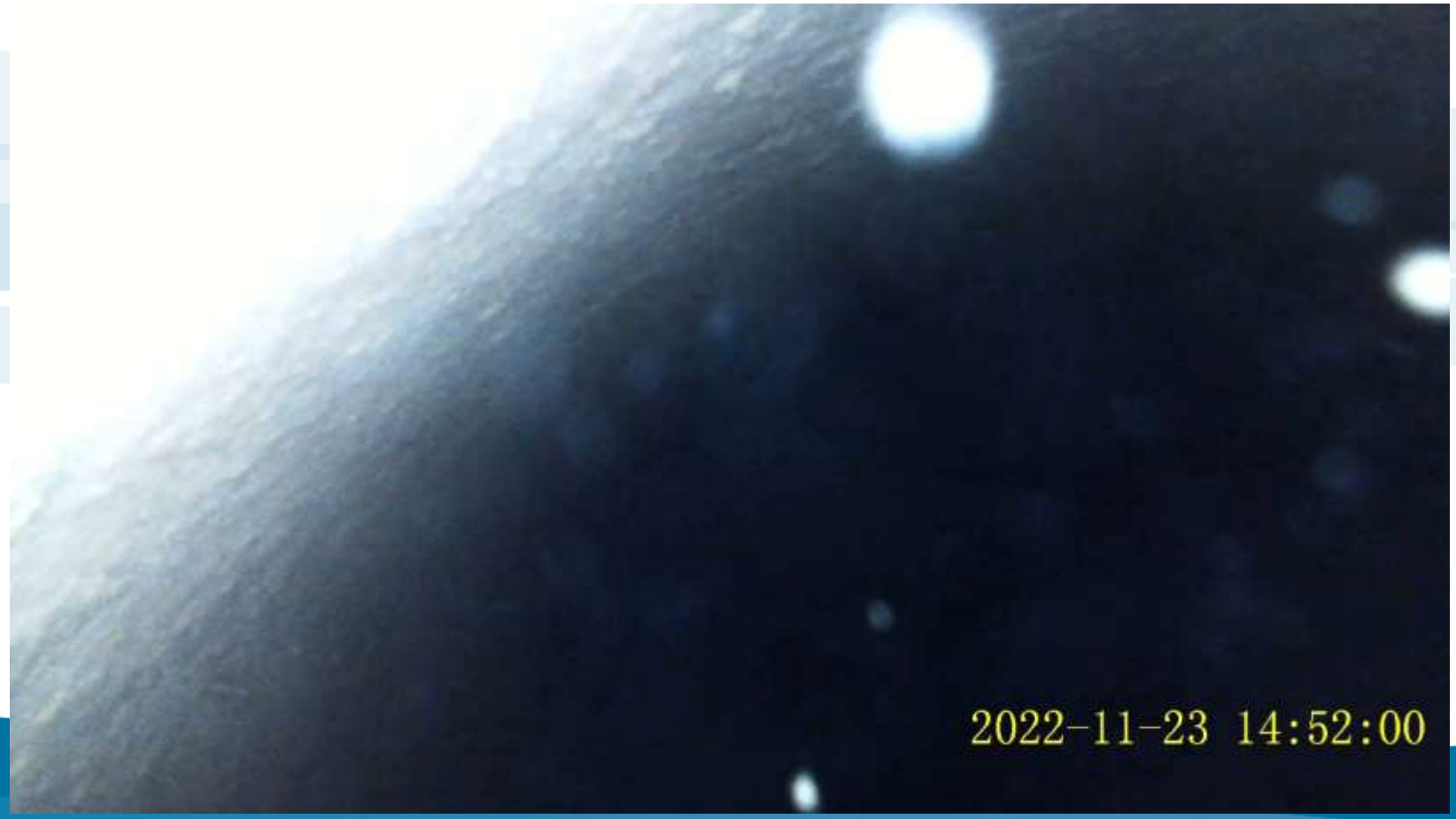
Strainer

Crossover

Results - biofouling

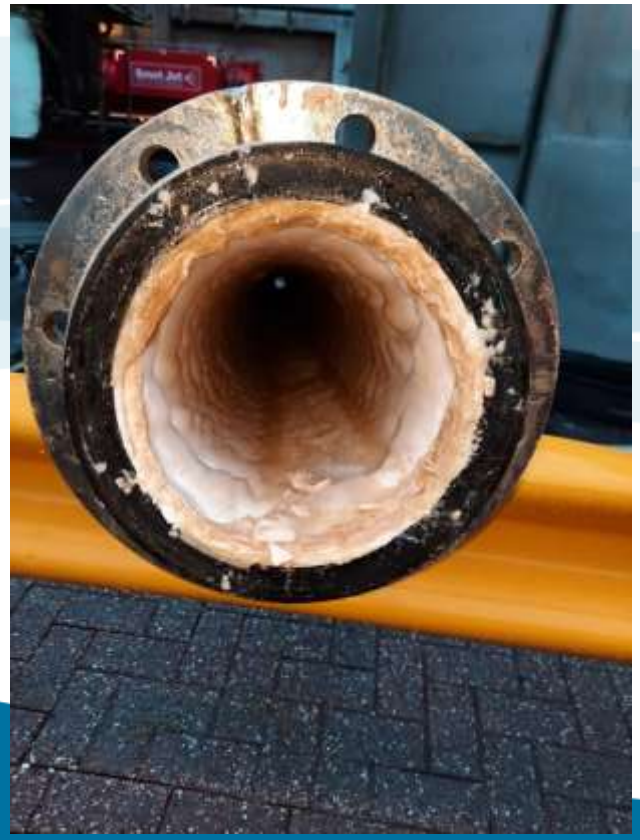
Without protection

With protection



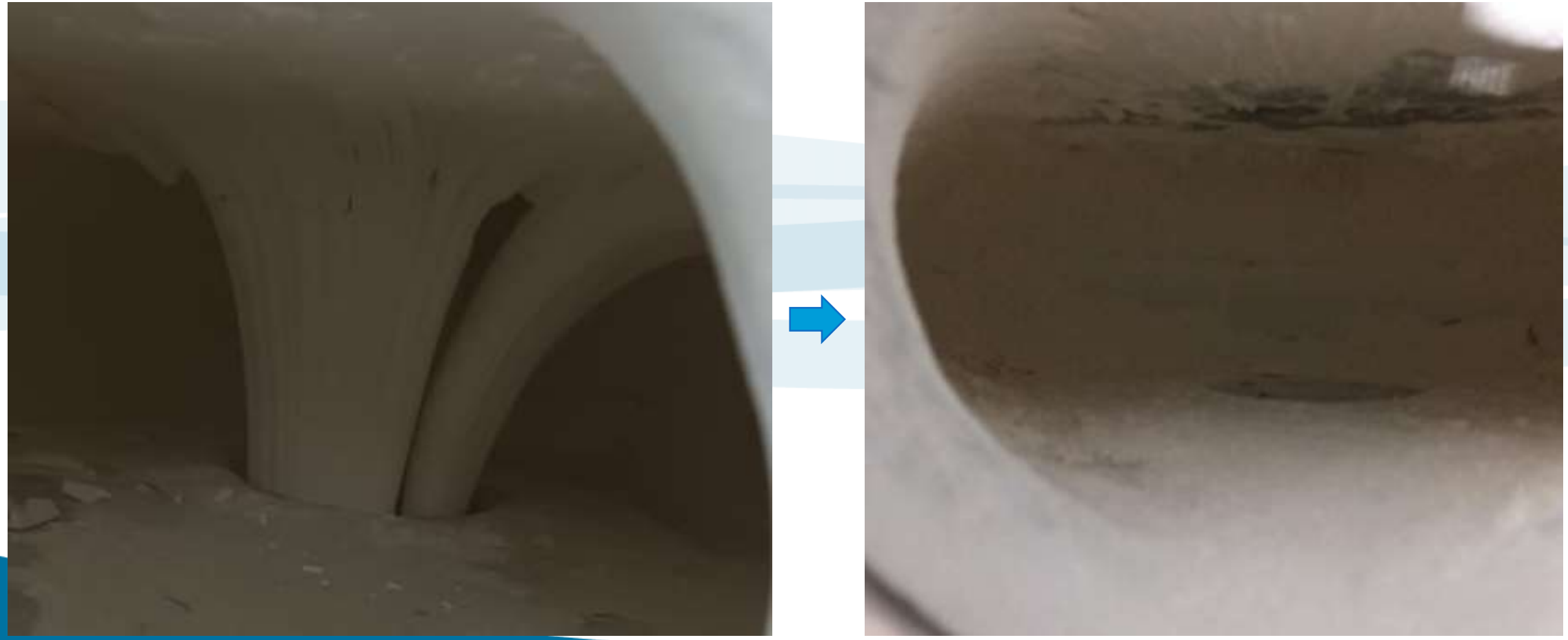
Results – scaling (wet)

Without protection



With protection

Results – scaling (dry)



Results – scaling (dry)

Without protection

With protection

Service

Measurement Location	Measurement before service (dB)	Measurement after service (dB)	Decibels Gained
Sea water inlet	83	91	8
Sea chest	81	95	14
Strainer	82	91	9

Real measurements taken from a patrol vessel two years after installation

The decibel scale is a logarithmic scale. An increase of 3dB means twice as much sound energy. An increase of 10dB means a increase of factor 10 in the sound energy.

Dried out coupling agent reducing sound transmission

A fresh layer of coupling agent providing optimal sound transmission

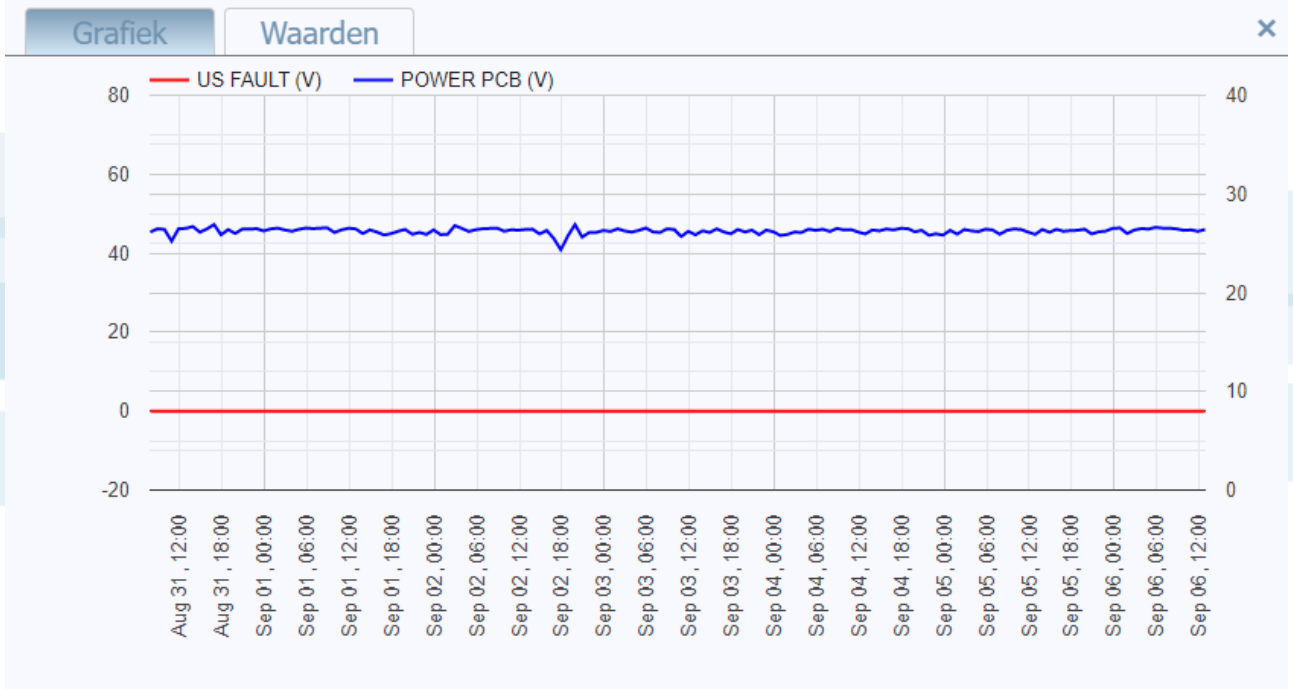
Monitoring

Why?

- Biofilm starts forming in minutes
- Ultrasonic Antifouling is preventive

How?

- Control Unit integration
- Power and fault monitoring
- 2G connection
- Log files
- Notification via call, SMS and/or e-mail



Service Plans

FEATURES	SERVICE	MONITOR	BASIC	STANDARD	PREMIUM
LSC Monitoring Device		✓	✓	✓	✓
LSC MD Installed		✓	✓	✓	✓
24/7 Monitoring		✓	✓	✓	✓
Notified When Issues Occur		✓	✓	✓	✓
MD Battery Replacement			✓	✓	✓
Annual Service	✓		✓	✓	✓
Service Reports	✓		✓	✓	✓
Endoscope Inspection				✓	✓
SPL Measurements (dB)				✓	✓
Issues Resolved by LSC				✓	✓
Call Out Costs Included				✓	✓
Labor Included				✓	✓
Full Equipment Warranty					✓
Annual Price	**€695**	**€995**	**€1.495**	**€1.895**	**€2.895**

All prices are excluding VAT and are subject to change. All service plans cover one vessel or up to 16 transducers. Service required for the monitor or basic plan will amount to LSC's standard service fee. For further information please view our Service Agreement.

BASF
We create chemistry

nyrstar

ICL

FrieslandCampina

Rijkswaterstaat
Ministerie van Infrastructuur en Waterstaat

vpk

LAMERS SYSTEM CARE B.V.

Oostwijk 9 | 5406 XT UDEN I The Netherlands

T: +31 (0) 413 275 647

CH. of C. 80139418 I VAT Nr. NL861565241B01

info@LSCare.nl I www.LSCare.nl